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10/527,006	03/07/2005	Daniel Martijn Damen	NL 020805	1125

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EXAMINER

HOLLWEG, THOMAS A

ART UNIT	PAPER NUMBER
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2879

MAIL DATE	DELIVERY MODE
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01/07/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/527,006

Applicant(s)

DAMEN, DANIEL MARTIJN

Examiner

Thomas A. Hollweg

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The disclosure is objected to because of the following informalities:
 - a. Reference number 135 refers to at least two elements: picture elements (abstract & page 9, line 19) and color pixels (page 6, line 31 & page 7, line 8) throughout the abstract and the specification.
 - b. Element 135R in figure 1B is not discussed in the specification.Appropriate correction is required.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. For the following claims, the named element must be shown or the feature(s) canceled from the claim(s).
 - a. Claim 1, the picture element (135). Examiner notes that according to the specification, the element 135 in figure 1A is a "color pixel" (page 6, line 32).
 - b. Claim 5, the outer electrode (114).
 - c. Claim 7, the picture elements (135R,G,B).No new matter should be entered.
4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. The disclosure is objected to because of the following informalities:
 - a. Claim 4 is dependent on itself. Examiner will treat claim 4 as dependent on claim 3.
 - b. Claim 5, the hop electrode lacks antecedent basis.
 - c. Claim 6, the electron beam guidance cavity lacks antecedent basis.Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1-2 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Veen et al., U.S. Patent No. 5,986,399.

8. With regard to claim 1, in figure 1, Van Veen discloses a display device (1), comprising: a display screen (12) for displaying image information, said display screen (12) comprising a first array of picture elements (13); cathode means (3) for emitting electrons and a number of electron concentrators (space above emitter 6) for collecting the electrons, an electron concentrator (space above emitter 6) having an exit aperture (5) for releasing an electron beam (21) impinging on a picture element (13) of the display screen (12), characterized in that the first array comprises a predetermined number of sub-arrays (13a-c), a sub-array (13a-c) comprising at least two of the picture elements (13), a single electron concentrator (space above emitter 6) is associated with a single sub-array (13a-c), so that the number of the electron concentrators (space above emitter 6) matches the number of the sub-arrays (13a-c), and the display device comprises selection means (15) for deflecting the electron beam (21) to one of the picture elements (13) within the sub-array (13a-c).

9. With regard to claim 2, in figure 1, Van Veen discloses that the display device (1) is characterized in that the electron concentrator (space above emitter 6) comprises the selection means (15).

10. With regard to claim 5, in figure 1, Van Veen discloses that the display device (1) is characterized in that the selection means (15) comprise an outer electrode (17)

arranged substantially outside the hop electrode (7), said outer electrode (17) having at least two segments (17a, 17c) on opposing sides of the exit aperture (5), between which segments a deflection voltage is applied for deflecting the electron beam (21).

11. With regard to claim 6, in figure 10, Van Veen discloses that the display device (1) is characterized in that a sub-array comprises an even number of picture elements (13R, 13B), a center of the sub-array being aligned with a main axis of the electron beam guidance cavity (6).

12. With regard to claim 7, in figure 1, Van Veen discloses that the display device (1) is characterized in that a sub-array (13a-c) comprises three picture elements (R, G, B) corresponding to primary phosphor colors of the display screen (12).

13. With regard to claim 8, in figure 1, Van Veen discloses that the display device (1) is characterized in that cathode means (3) comprises a field emitter (6).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Veen as applied to claim 1 above, and further in view of Koninklijke Philips Electronics N.V., WO 03/041039 A2.

16. With regard to claim 3, in figure 1, Van Veen discloses an electron concentrator with an electron beam guidance cavity (cavity in layer 4) with an exit aperture (5), and a

hop electrode (7) arranged near the exit aperture (5). However, Van Veen does not expressly disclose a secondary emission material within the electron beam guidance cavity, or that the entrance is larger than the exit aperture

17. Koninklijke, in figure 1, teaches a display device (50) with an electron concentrator (15) that comprises an electron beam guidance cavity being provided with secondary emission material (page 9, lines 20-25) and having an entrance (16) being larger than the exit aperture (17), a hop electrode (11) being arranged near said exit aperture (17) for enabling a hopping transport of the electrons to said exit aperture (17).

18. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Van Veen display device with the electron concentrator taught by Koninklijke. This arrangement would prevent deterioration of the device over its lifetime by preventing positive ions from colliding with the cathode means, as taught by Koninklijke (page 3, lines 1-7).

19. With regard to claim 4, in figure 1, Koninklijke teaches that for the electron beam guidance cavity (15), a ratio between a surface area of the entrance (16) and a surface area of the exit aperture (17) is at least 10:1 (page 10, lines 6-8). For the reasons set forth in the rejection of claim 3, it would have been obvious to construct the Van Veen display device, modified by Koninklijke, with this further modification.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Hollweg whose telephone number is (571)

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270-1739. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm E.S.T..

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TH



Joseph Williams
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